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The educational implications of the research, "A Survey and Analysis of Major Tasks, Knowledges Associated with Work and Child Care Occupations," (ED 021 066) are examined. A proposed framework for curriculum development and child care contains task analysis, knowledge derivation, behavioral objective development, and organization of objectives into the curriculum. The knowledge required for the performance of many given tasks may transfer to the performance of others. General sets of capabilities increase the occupational opportunity and choice of individual students. To be useful as a component in vocational curriculum building, functional definitions of the characteristics and capabilities of a person who has attained an educational objective are needed. A behavioral objective states what the student can do, but it does not in any way state how the behavior must be learned. Teaching then becomes an act designed to facilitate learning, not an act having relevance in itself. A curriculum in child care should be a meaningful collection of behavior objectives which enables the learner to perform certain tasks and assume more responsibility for his own education. By beginning with knowledges and developing a curriculum of behavioral objectives, one exposes the communality of tasks and opens up a large potential for further generality. (FP)

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A RESEARCH BASIS FOR CHILD CARE CURRICULUM DEVELOPMENT

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Introduction

For many years curriculum developments in vocation education have been based upon analyses of tasks involved in occupations and capabilities associated with performance of major tasks. Under Title IVc of the Vocational Education Act of 1963, it has become possible to accelerate the study of labor needs of our society and the ways schools can better prepare young people to meet these needs. The experimental design curriculum development in vocational education illustrated here draws extensively on recent research. The study out of which many of the ideas presented here came was conducted by staff members of the Vocational-Technical Research and Development Project at Washington State University.

Philosophical Frame Work

To foster the personal integrity and rights of young people and to develop a productive working force, it is essential to have a curriculum designed to maximize the career-long occupational opportunity, competence and choice of youth in an evolving technological society. Consequently, this research was rooted in the philosophic premise that occupational freedom involves both informed choice of alternatives and competence to work effectively. The economy needs constantly larger numbers of workers possessing new capabilities. But youth can evaluate only those occupational choices that they perceive; they are free to perform only the kinds of work for which they acquire competence.

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Implications for Child Care Curricula

Under the joint sponsorship of Washington State University, the University of Idaho, the Washington State Board for Vocational Education, with support from the United States Office of Education, a research project is being carried out which applies portions of the schema presented in this paper.

One major purpose of this Project is to identify knowledges and competencies most likely to maximize the career-long occupational opportunity, competence, and choice of non-college bound youth in an evolving technological society.

The first objective is to obtain facts about what major types of tasks are actually performed in occupations most likely to provide employment opportunity for substantial percentages of non-college bound youth and to identify major types of knowledge most likely to prepare them for such work. On the basis of Bureau of Labor Statistics projections, the following occupational areas were selected for study: office, general merchandise retailing, building trades, electronics, food service, and child care.

The specific phase of the Project considered here reports tasks and knowledges most widely associated with non-professional work in child day care centers (SEE reference 2). The paucity of research reports indicates that relatively little has been done to identify either the actual tasks performed by non-professional workers engaged in child care services or the cognitive and affective capabilities associated with effective work. More accurate information about those matters will help vocational educators plan curricula and instructional materials needed to meet a growing economic need and to prepare more individuals for the occupational opportunities inherent in that need.

To ascertain and analyze the tasks currently performed by workers in child care service occupations, data was collected, classified, and analyzed to:

Conceptualize and rank major categories of tasks according to frequency of performance.

Conceptualize and rank specific tasks most frequently performed within the major task categories.

Ascertain relationship of the task performed and the education and training level of the workers.

Identify similarities and differences of tasks performed by persons working in various types of child care centers, private nursery schools, migrant worker day care camps, community cooperative day care centers, and Head Start centers.

Ascertain existing relationship between training and present work assignments and patterns.

The second objective of this study was to analyze the most frequently performed tasks to determine the knowledges requisite for their performance.

In the above cited study it was ascertained that the majority of child care workers perform the tasks of preparing and caring for materials. It is useful to know that preparing materials and caring for them are important tasks performed by child care workers; however, this alone does not provide the guidance necessary to develop a meaningful curriculum element for the training of child care workers. The task must be further defined. Subsequently it was determined that one must possess the knowledge that in order to be used, materials must be within the reach of children. Thus, one bit of knowledge necessary for the performance of the task has been determined. But merely to teach the fact that materials should be conveniently available is not in itself

useful. Why is this knowledge important to the performance of the task? The answer is obvious: The worker will be able to place materials so children can use them. There may be, and in fact are, other knowledges necessary before a person can make materials usable to children, but these too can be enumerated. The important point is, why should a person possess these knowledges? What behavior do we want the person to possess? Stated as a behavioral objective we can say: given a common piece of equipment, place it appropriately for a child to use. This tells us what we want the student to do; that is, how to use his knowledge. Combining this and other objectives a curriculum could be developed for child care workers.

Another example seems desirable to illustrate the need for proceeding to the knowledge level before reconstituting knowledges into behaviors. The task "assist individual children" was performed by over 50 percent of the persons responding to this item from the above mentioned study. To participate effectively in such taks it would be desirable if the child care worker could direct a child to the facilities available or assist him in using the equipment or in helping himself. In order to help the child help himself, the worker should possess certain knowledge of material placement and use; one of which is the before-mentioned knowledge that materials should be within the reach of children. Thus, although the performance of the behavior of "prepare and care for materials" and "assist individual children" does not appear related at the behavioral objective level, it does show communality at the knowledge level. This community is vital to the development of an integrated curriculum structure of behavioral objectives.

A Research Rationale

An example of curriculum research in child care has been presented. Now let us examine the broader implications of this research. Curriculum must be designed to prepare young men and women for the jobs that exist today as well as prepare them to be able to be occupationally mobile as their abilities and interests develop and as new opportunities emerge. The proposed framework for curriculum development in child care is as follows:

Task Analysis
Knowledge Derivation
Behavioral Objective Development
Organization of Objectives into a Curriculum

Now let us examine each area of this framework.

A first step in designing a curriculum to meet the needs of any group is to carefully analyze jobs to determine the tasks performed. This step is so obvious that it is often overlooked as curriculum developers hasten to prepare a finished product. It is essential that very careful task analysis be made. Effective curriculum planning requires accurate facts about what tasks are performed and the extent to which they are performed by workers.

But information about tasks alone often obscures the curriculum best suited for educating persons for a job. It is also essential to ascertain what knowledges and capabilities are necessary for the performance of these tasks. Definitions of tasks are often too general to be useful in curriculum development. The effective performance of a task may be the culminating goal of the curriculum, but to achieve this goal usually required programs of study helping pupils acquire the many specific capabilities required for performance. Likewise, pupils need to develop general capabilities essential for performance of related families of tasks. Students learning to perform only a few specific tasks are likely to isolate themselves from potential performance of other similar tasks.

The knowledge required for the performance of many given tasks may transfer to the performance of many others. If the knowledges and capabilities necessary for performance of tasks are identified, they can be used as building blocks for a curriculum which helps prepare students for performance of other similar tasks. These general sets of capabilities increase the occupational opportunity and choice of individual students.

Just as definitions of major tasks are not sufficient for the development of a curriculum, neither are definitions of the knowledge necessary for the performance of tasks. Knowledge alone is inadequate in a vocational context. Much knowledge is useful because it contributes to the intrinsic pleasure and insight of the knower without having any visible utilitarian function. To be of practical value each bit of knowledge should be related to work. But occupationally relevant knowledge is useful because it enables the knower to be a more utilitarian being. To be useful as a component in vocational curriculum building, knowledge must be translated into behavioral terms. That is, what useful work should the knower be able to do because he possesses this knowledge? Stating that idea another way, we need functional definitions of characteristics and capabilities of a person who has attained an educational objective as opposed to one who has not. These "behavioral objectives" are cores of the curriculum. Behavioral objectives can vary considerably in their implications for curriculum building and task performance. On one hand, a cognative-psychomotor-behavioral objective might specify that a given hammer, a two-penny nail, and a two-by-four, the subject can pound the nail completely into the wood in ten seconds. Such an objective has obvious utilitarian value. Contrast this with a behavioral objective such as: given a choice of reading a book on football, child development, art, or auto mechanics, the subject will select a book

on child development four out of five times. This objective is not merely cognative or psychomotor; it is distinctly affective in nature. These two examples illustrate the idea that various types of behavioral objectives are extremely relevant to both vocational and general education. Statements of objectives in behavioral terms eliminate the need for a distinction between "knowing" and "knowing how to". For example, what does it mean that a student knows shorthand? Or, what does it mean that a student knows how to take shorthand? Until it is specified what a person is expected to do and the conditions under which the act must be performed, "knowing" is a term too vague to be of much use for curriculum development. There is so much for students to learn and so little time for them to learn it that we can ill afford to waste their time pursuing ill-defined objectives which lead to no identifiable job proficiency.

Well-defined objectives offer other advantages in addition to their obvious clarity of definition. Such objectives can serve as specific building blocks out of which curriculum can be designed. They can be components out of which larger tasks are constructed. Because such tasks can be composed of the performance of one or more behavioral objectives, they are more generally useful. Since a knowledge is an abstraction which in itself does not indicate that a person can do anything, one must relate it to behavioral objectives to define tasks and ultimately useful curriculum building blocks. Curriculum development based upon behavioral objectives provides an additionalbenefit. A behavioral objective states what the student can do, but it does not in any way state how the behavior must be learned. Teaching then becomes an act designed to facilitate learning, not an act having relevance in itself. Stating objectives in

behavioral terms can be a large step in helping educators design learning strategies and in helping students to take responsibility for their own learning. Then all resources outside the student himself, that is, books, films, instructors, tapes, and machines can become means of facilitating learning. Each component can be used by the student to the extent that it facilitates attaining his desired behavior. Thus, when the student knows what behavior he is attempting to perform and is guided in selecting components which will assist him in performing the behavior, he assumes more responsibility for his own education. This in itself is a behavior which has life-long benefits in our rapidly changing technological society.

It is, of course, possible for performance of a task to be a behavioral objective. Whether or not this is the case depends on the level of specificity which one can obtain from the task analysis as opposed to the level obtained from stating knowledges. It is, however, useful to reduce the task to the knowledge level to assist in ferreting out communalities in behavioral objectives. As was illustrated previously, the specifying of knowledges assists one in ascertaining communalities in tasks.

Analyzing tasks on the knowledge level has one additional benefit. The component knowledges associated with an objective provide indicators that the student might be able to demonstrate acceptable performance of the objectives. For example, if it can be determined that a student knows that hydrogen peroxide is useful for treating minor cuts, this is one indicator that the student may be able to apply that type of first aid. Of course, such an indicator does not tell whether or not a student is disposed to perform that specific behavior, but it provides some data with which to make such an assumption.

Ultimately, effective curriculum can best be developed from behavioral objectives. Such curricula can be defined as an underlying structure giving coherence to a set of objectives. Curriculum is thus a meaningful arrangement of behavioral objectives.

A curriculum in child care should be a meaningful collection of behavioral objectives which enable the learner to perform certain tasks. However, one must take care not to lapse into the assumption that a curriculum is merely aimed at performance of a collection of tasks. If one erroneously defines a curriculum in terms of task performance, one loses the generality obtained by going to knowledges. Thus one might teach separate, but closely related tasks as separate items without consideration for their communality. By beginning with knowledges and developing a curriculum of behavioral objectives, one exposes the communality of tasks and opens up a large potential for futher generality. On the other hand, because the curriculum is composed of behavioral objectives, one insures that the student can do something, he can exhibit a behavior. Because he can exhibit a behavior, one does run the risk that the student posseses a lot of knowledge, but can do nothing.

A vocational curriculum based upon behavioral objectives also lends itself to empirical validation. For a curriculum to be vocationally valid, it must pass two tests. First, can a student educated in the curriculum perform the tasks revealed by the original task analysis? Second, can the student perform related tasks not revealed in the original analysis but subsequently found useful? If a curriculum cannot meet the first test, it obviously does not meet

the needs of today. If it cannot meet the second test, it cannot meet the needs of tomorrow. Research which is continuously analyzing tasks which need to be performed and developing their knowledge and behavioral objective implications, creates dynamic curriculum meeting the needs of today and tomorrow.

In summary, the theoretical framework for curriculum development in vocational education is (1) research analysis of the tasks to be performed, (2) derivation of the knowledges necessary for the performance of the tasks, (3) definition of the behavioral objective based on what the student must do with the knowledge, and (4) organization of objectives into a coherent curriculum.

The Task Ahead

This paper aimed to present a research framework for child care curriculum development. Work has been cited which begins to carry out this schema, but much remains to be done. Further task studies need to be carried out to expand and validate the results of early studies. Careful analysis of the task data needs to be carried out to derive meaningful knowledges. The task-knowledge data then needs to be carefully used to develop meaningful behavioral objectives for child care in the affective and psychomotor as well as the cognitive domain. Subsequently these behavioral objectives need to be organized into a meaningful child care curriculum designed to meet the needs of students and satisfy the demands of a changing world of work. Once the curriculum has been derived, the subsequent steps of instruction, cross validation of instructional results with original needs, and continual updating of the curriculum can begin.

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